



Edgewood College
2015 Green Tier Report

June 2016



EDGEWOOD COLLEGE



GREEN TIER

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**Edgewood College
Madison, Wisconsin
Annual Report for 2015
June 2016**

I. EXECUTIVE SUMMARY

Edgewood College is committed to creating a sustainable environmental management system for the entire campus living and learning community. By becoming a Green Tier participant, Edgewood College reaffirmed its commitment to its environmental policy which includes four major strategies; 1) complying with regulatory requirements, 2) reducing our ecological impacts, 3) fostering continuous improvement and 4) integrating environmental awareness and conservation into our curriculum.

For the year 2015, we had several goals that shaped the College's environmental and Goal 1 -- Planning: More fully integrate oversight of Green Tier goal setting, reporting and EMS auditing within the agenda and tasks of the Campus Sustainability Coordinating Team (CSCT).

Result: In addition to reinvigorating the regular review and prioritization of the items on our aspects and impacts matrix, the Green Tier goalsetting process has been formally aligned with this matrix to ensure true EMS functional equivalency. Internal EMS auditing functions have been updated to provide enhance alignment with Campus operations.

Goal 2 -- Buildings: Reduce energy use by 2% in campus buildings compared to a three year baseline through implementation of ongoing energy reduction projects. The 2015 results are discussed below.

Result: Electricity – For 2015, the College saw a decrease of 8.5% of kilowatt-hours per square foot electricity usage compared to the prior three year average used as a baseline. Comparing 2015 to 2014 alone the decrease was 2.8%.

Natural Gas – For 2015, the College saw a 21.8% decrease in its measurement of the weather adjusted use of natural gas compared to the prior three year base period average. Comparing 2015 to 2014 alone the decrease was 2.4%.

Goal 3 – Sustainability Revolving Fund: Further engage the campus community in providing suggestions for Sustainability Revolving Fund investments.

Result: Campus sustainability projects included additional relamping projects to convert from CFP to LED technology. The fall 2015 undergraduate Business School course “Organizational Sustainability & Innovation” included service-learning projects to assist the Campus Sustainability Coordinating Team and our Green Revolving Fund. Team projects included determining the latest sustainability best practices for: (1) reduce, reuse, and recycle, (2) solar

panels, (3) IT, (4) delivering course content, (5) procurement, (6) renewable energy, (7) alternative transportation, and (8) communicating. These best practices were then shared with the CSCT for consideration as part of EMS goalsetting.

Other 2015 highlights include:

- Edgewood College received the Sustainable Endowments Institute's "Best of Green Revolving Investment Tracking System (GRITS) 2015" for Highest Average Annual Energy Savings from a Single Project (Small Institution).
- 100% green power electricity was purchased from Renewable Choice for the Stream, our LEED-Gold Certified Visual Arts Theater.
- Replaced 1,498 CFL lamps/fixtures with 1,687 LED lamps/fixtures. The expected energy savings is 209,453 kWh's per year, with expected energy cost savings of \$23,040 per year, for a 4.13 year payback.
- Water usage was 3.8% lower than the prior three year base period average
- New water bottle fillers saved an estimated 6,500 additional plastic bottles
- Installation of several 1.28-gallon toilets in a residence hall
- Development of a reusable takeout container program to reduce the amount of food packaging waste
- Reduced paper used in printers and copiers by 9%

The Campus Sustainability Coordinating Team continues to assess and improve the College's environmental and sustainability efforts since joining Green Tier. This review provides for the continuous improvement objective which is included in the college's environmental policy and environmental management system. The report provides further in depth information on our efforts to meet our 2015 goals.

II. INTRODUCTION

Edgewood College is a liberal arts college located in Madison, Wisconsin, adjacent to Lake Wingra. The College is administered by the Sinsinawa Dominican Sisters. In 2006, Edgewood College became a member of the Green Tier Program.

Our sustainability efforts are guided by Edgewood's unique Campus Sustainability Coordinating Team (CSCT) composed of faculty, administrators, staff and students that originated in 2006. The team meets monthly to collaboratively advance sustainability initiatives.

Edgewood College has a commitment to environmental stewardship and sustainability which resonates deeply at the College, a legacy begun by the native people who first cared for this very special 55-acre campus (including high school and elementary school) on the shore of Lake Wingra. The College is honored to be part of the sustainability legacy we inherited.

III. ENVIRONMENTAL PERFORMANCE

a. Electricity and Natural Gas Use

Our goal for 2015 was to reduce energy use by 2% in campus buildings compared to a two-year baseline through implementation of ongoing energy reduction projects. The 2015 results are discussed below.

Electricity – For 2015, the College saw a decrease of 8.5% of kilowatt-hours per square foot electricity usage compared to the prior three year average used as a baseline. Comparing 2015 to 2014 alone the decrease was 2.8%. These results demonstrate the effect of the projects and initiatives the College has implemented to reduce electricity usage with much of the focus being on Sonderegger Science Center. Compared to 2008 the College's overall electricity usage per square foot is now 21.5% lower.

Natural Gas – For 2015, the College saw a 21.8% decrease in its measurement of the weather adjusted use of natural gas compared to the prior three year base period average. Comparing 2015 to 2014 alone the decrease was 2.4%. Consistent with electric usage results the most significant reduction occurred due to energy saving initiatives in the Sonderegger Science Center. Compared to 2008 the College's overall weather adjusted natural gas usage per square foot is now 21.2% lower.

- **Renewable Energy** – 100% green power electricity was purchased from Renewable Choice (<http://www.renewablechoice.com>) for the Stream, our LEED-Gold Certified Visual Arts Theater.

Energy Usage Comparison Summary									
	2008	2009	2010	2011	2012	2013	2014	2015	3 Yr Base Period Avg (2012-2014)
Electric						(a) →			
Total Billed	\$683,645	\$659,124	\$681,933	\$691,014	\$697,227	\$740,898	\$706,477	\$721,532	
Total Kwh's	6,996,114	6,703,811	6,674,838	6,557,369	6,325,308	6,581,141	6,140,186	5,972,273	6,348,878
Total Square Feet	519,694	519,694	519,694	521,448	521,448	565,419	565,419	565,419	550,762
Kwh/Sq ft	13.46	12.90	12.84	12.58	12.13	11.64	10.86	10.56	11.54
% Change from Prior Year		-4.16%	-0.47%	-2.02%	-3.58%	-4.04%	-6.70%	-2.76%	
% Change from Base Period								-8.49%	
	2008	2009	2010	2011	2012	2013	2014	2015	3 Yr Base Period Avg (2012-2014)
Gas						(a) →			
Total Billed	\$294,826	\$238,176	\$213,655	\$215,900	\$177,536	\$201,653	\$218,024	\$145,773	
Total Therms	298,599	292,340	298,232	316,648	290,959	319,710	292,488	237,237	301,052
Therms/Sq ft	0.593	0.580	0.579	0.617	0.567	0.574	0.525	0.426	0.555
Heating degree days (HDD)	7499	7487	6747	7369	5896	7263	8227	6838	7129
Therms/Sq Ft/HDD	0.0000790	0.0000775	0.0000858	0.0000837	0.0000962	0.0000790	0.0000638	0.0000623	0.0000797
% Change from Prior Year		-1.94%	10.67%	-2.36%	14.84%	-17.84%	-19.23%	-2.41%	
% Change from Base Period								-21.83%	
(a) Started including data for The Stream for full calendar year 2013.									

b. Water Use

College water usage for 2015 was 3.9% lower than the prior three year base period average. This was primarily due to improvements made affecting water usage in DeRicci Hall and Sonderegger Science Center.

[illegible]

Water Reduction Efforts:

- Installed 2 new bottle fillers in residence halls which has saved an additional approximately 6,500 bottles.
- Installed several more 1.28 gallon toilets in Dominican Hall.

c. Buildings

Edgewood College maintains a continuous improvement perspective in terms of our facility operations. Enhancements in 2015 include:

- **Lighting:** Replaced 1,498 CFL lamps/fixtures with 1,687 LED lamps/fixtures. The expected energy savings is 209,453 kWh's per year, with expected energy cost savings of \$23,040 per year, for a 4.13 year payback.
- **Energy Audit:** A retro-commissioning and Energy Audit was completed for our Deming Way Campus. The implementation work included RTU scheduling, cleaning air intakes, optimize powered exhaust run times, thermostat limiting, and replacement and rebalancing of the VAV system.
- **Regina Hall Addition:** The Regina Hall addition, an ongoing 2015-2016 project, was designed with very high focus on energy and water efficiency, as well as a strong focus on sustainable landscape and construction and waste management throughout the construction process. The new HVAC system, which will provide heating and cooling to the new residence hall as well as the existing Regina residence hall, was developed in partnership with KJWW and Focus on Energy.

The addition was designed, developed, and constructed according to LEED guidelines but we will not be applying for LEED certification. The current design earned 49 LEED points, which is high "Certified" on the border of Silver, with another 7 possible points listed. We recognize that attaining LEED certification is great public relations as well as great design. But LEED certification for building additions is a complicated process with costly administrative concerns, money which could be better invested in the building itself.

We have implemented aspects of plumbing that will reduce water usage, as well as added high-efficiency lighting control systems. We have a plan for minimizing construction waste and promoting recycling during the project, and have incorporated low-emitting materials in the design of the project. We broke ground in May 2015, and the new residence hall is expected to open in August of 2016.

d. Waste

Waste Reduction Efforts:

- Edgewood College is using Shred-it confidential recycling containers to improve recycling on campus. Shred-it is a Paper Recycler that provides bins for paper only in specific areas. This paper is shredded and returned to paper mills to process for resale.
- Waste continues to use containers labeled 'Landfill' which have paired with containers intended for single stream recycling.
- We have partnered with Rooted Curbside Compost and continue to expand our composting program to post-consumer beginning in the dishroom. This supports a small

local business as well as diverts waste to become compost that can also be used in our garden.

- The Dining Services team also continues to donate over 1,500 pounds of food annually to local organizations feeding those with limited incomes and diverting waste from the landfill.
- Dining Services has gone trayless, resulting in less waste and less water use.
- Our Bookstore continues to recycle or reuse each corrugated box and packing material that comes into the bookstore.
- In order to reduce paper waste, the Human Resources Department continues to post resumes directly to an internal web page so that all hiring teams can view the candidates' information versus printing out copies. In addition, employee changes are done via electronic form versus paper copies.

e. **Landscape and Grounds**

- **New Woodland Garden:** The College is developing a new woodland garden with path behind Regina and Stevie Halls that will also be available as an education space.
- **Additional Edible Plantings:** The whiskey barrels on campus containing flowers in front of Sonderegger Science Center and Regina Hall areas now also contain kale, brussel sprouts, and other delicious healthy edibles.
- Butterfly plants and bush gardens are being planted by Dominican Hall. Student employees planted a shade garden by Dominican Hall.
- We are working toward "Tree Campus USA" certification
- **New Rain Gardens:** Rain gardens have been added at Marshall Hall and Mazzuchelli Hall

f. **Transportation**

Performance data in this section is provided for the academic year (August-May) rather than calendar year for our recording keeping ease.

i. ***Madison Metro Bus Program***

Edgewood College provides low-cost Madison Metro bus passes for all students, faculty, and staff. Ridership remains strong this year even with the continued implementation of our policy requiring an Edgewood ID to receive a bus pass.

User Participation Record – 2015-2016 Academic Year

	Fall	Spring	Total
2006-2007	841	574	1415
2007-2008	918	750	1668
2008-2009	1252	751	2003
2009-2010	1319	749	2068
2010-2011	1289	859	2148
2011-2012	1202	971	2173
2012-2013	1195	928	2123
2013-2014	1147	910	2057
2014-2015	1305	913	2218
2015-2016	1219	817	2036

ii. Commuter Shuttle Program

Edgewood College offers a FREE shuttle program for students, faculty and staff as an alternative to parking on campus. Participants park at either AMC Star Cinema on McKee Road or Westwood Christian Church on Odana Road. The program has been designed to reduce the stress associated with parking and commuting to campus. It also gives members of the community a way to save money and help the environment. Users of the shuttle program have reported cost savings of close to \$500.

User Participation Record – 2015-2016 Academic Year

	Totals
2007-2008	84
2008-2009	149
2009-2010	125
2010-2011	143
2011-2012	150
2012-2013	167
2013-2014	122
2014-2015	130
2015-2016	124

iii. Commuter Biking Program

Faculty and staff who bike to campus are encouraged to participate in the College's registered biking program. Participants are issued a swipe card for the Saris HUB system which allows them to track their trips, mileage, CO2 saved, and gas money saved. A focus group survey was conducted for the Alternative Transportation

Committee. Information was gathered on likes and areas to improve. The highest desired priority was indoor bike parking.

g. Dining Services

Edgewood College Dining Services is committed to environmental stewardship and sustainability. Since the main dining hall (Phil's) was remodeled in 2007, a renewed energy has pushed Dining Services to embrace our obligation to the environment on behalf of the Edgewood College Community. As a part of our commitment, Phil's is proud to be the first college dining facility in the state of Wisconsin to be a Certified Green Restaurant®.

Dining Services continues to implement local product sourcing into our programs when possible. Dining Services is also very conscious of waste reduction. We continue to donate any food that cannot be utilized on our production to a local charitable organization that is then distributed to those in need twice a week. Dining Services also continues to compost pre-consumer waste on campus with the compost being utilized in the kitchen garden and hoop house. We continue to partner with our Facilities Department to look for a commercial composting facility in the area that will pick up post-consumer waste.

- **Composting:** We are now composting kitchen scraps and coffee grinds from Phil's and Wingra Café year-round with Rooted Curbside Compost. Dining Services pays pick-up fees and can receive soil in return. Previously, we composted about 100 gallons every other week. We continue to compost yard waste down the hill from our garden.
- **Certified Green Restaurant Status:** Phil's Cafeteria was [re-certified as a 3-Star Certified Green Restaurant](http://www.dinegreen.com/). Continuing to be environmentally responsible remains an important condition of our dining services partnership with our contract dining services provider Chartwell's, and this recognition validates our shared efforts in that important area. (<http://www.dinegreen.com/>)
- **Reusable Takeout Container Program:** Many students, staff and faculty have purchased BPA-free reusable containers. They can purchase the container for \$10 to use as long as desired and then receive \$10 back upon returning the container when no longer desired. After each use, the container can be returned to Dining Services for cleaning, the person will be given a token, and then can exchange the token the next time for clean container.
- **Community Garden:** Dining Services uses a community garden to harvest their own food to be used on Campus. This reduces the amount of packaging as well as transportation cost for a portion of their food supply.

h. Paper Use and Information Technology

Performance data in this section is provided for the academic year (August-May) rather than calendar year for our recording keeping ease.

i. Paper Use

In 2013, we implemented PaperCut, a paper management system. Key indicators tracked are pages printed and jobs. This information is shared with faculty and staff on a monthly basis. The information is also conveyed in terms of trees consumed, CO2 produced, and equivalent bulb hours.

	Pages	Jobs	Trees Consumed	CO2 Produced	Equivalent Bulb Hours
2013-2014	3,690,481	453,508	31.76	11,503 kg	724,285
2014-2015	3,684,658	442,402	31.98	11,585	729,463
2015-16	3,354,4342 (-9%)	414,659 (-6%)	28.48 (-11%)	10,317 (-11%)	649,564 (-11%)

For 20115-2016, we achieved reductions in pages, jobs, trees consumed, CO2 produced, and equivalent bulb hours.

ii. Computer Management

Edgewood College replaced more than 275 computer/monitor systems in 2015 with new, higher efficiency models as part of an annual update and replacement process. In addition, we began working with a new electronics recycler which provides a previously unsurpassed level of materials recycling and landfill reduction practices.

j. Sustainability Fund

The Edgewood College Sustainability Fund was established when the College joined the Billion Dollar Green Challenge (<http://greenbillion.org>) which encourages colleges, universities, and other nonprofit institutions to invest a combined total of one billion dollars in self-managed revolving funds that finance energy efficiency improvements. Participating institutions achieve reductions in operating expenses and greenhouse gas emissions, while creating regenerating funds for future projects.

Our green revolving loan fund provides financing for specific projects that reduce the use of natural resources and also save money. The savings generated from a project are used to repay the revolving loan fund and in turn provide funding for future projects.

At the end of 2015, the fund had balance of approximately \$105,000.

In 2015, the Fund's project investments included:

- Replacing 1,498 CFL lamps/fixtures with 1,687 LED lamps/fixtures. The expected energy savings is 209,453 kWh's per year, with expected energy cost savings of \$23,040 per year, for a 4.13 year payback.

The College received a trophy from Sustainable Endowments Institute "Best of Green Revolving Investment Tracking System (GRITS) 2015" for Highest Average Annual Energy Savings from a Single Project (Small Institution). We were one of only 6 higher education institutions in the United States to receive a GRITS award. Edgewood College was recognized for energy upgrades to the Sonderegger Science Center, the College's largest building and highest energy user. The College recently added a high-efficiency hot water heater, which enables the less

efficient boilers to be turned off for extended periods, while still providing hot water for labs and other applications. This project, along with other steps, significantly contributed to the recent College wide energy consumption reduction of 24% for natural gas and 9% for electricity in 2014.

k. Communications

CSCT continues enhanced communications with the campus community with the assistance of a Communication Studies intern. We manage a Sustainability Bulletin Board in a public area of DeRicci Hall. The interns create brochures, green tips, and other material for the bulletin board, as well as promote a sustainability video for television highlighting college activities. "Monthly Challenge" flyers were sent out through social media.

A "Social Responsibility in Business" class designed several Dashboard Indicators for electricity, natural gas, water, and transportation use. The Dashboard is displayed on the Sustainability Bulletin Board.

IV. EMS AUDIT

An internal audit of Edgewood College's Green Tier EMS plan was conducted in 2015. The results of the EMS audit indicate that the Edgewood College environmental management system (EMS) conforms to the ISO 14001 functional equivalency requirements and the specific additional requirements of the Green Tier program found in ss.299.83. "Continual improvement" and the active "preventive and corrective process" were demonstrated by the changes established in the EMS. The findings also confirmed that Edgewood College is operating the EMS in a manner that results in "superior environmental performance" as defined by the Green Tier Program (ss. 299.83).

The audit findings did note two "minor" non-conformances. (1) The Aspects and Impacts matrix was found to have not been formally reviewed and updated in 2014-15 Academic year. Corrective actions were implemented and documentation was reviewed to confirm satisfactory completion of the actions. (2) The annual Green Tier EMS goals for 2015 were found to not be completely derived from the EMS Aspects and Impacts Matrix. Corrective actions were implemented to ensure the 2016 goals are specifically aligned with the A&I data.

V. STAKEHOLDER INVOLVEMENT

One of the four goals of Edgewood College's Environmental Policy is to develop courses that integrate environmental issues, enrich the learning experiences of students, provide practical solutions to work-life and home-life situations, and maintain a leadership role as a community resource that exemplifies environmental management excellence. Edgewood College has implemented the following to move this goal forward.

a. Undergraduate Studies

All Edgewood undergraduate students must accrue certain "experiences" by successfully completing a number of "tagged" courses that fall into certain categories, one of which is "Perspectives on the World." Students must take at least one course with an "E" tag, which has

been approved as meeting the criteria for the Environmental Perspectives experience. The following describes the goals that have been established for the Environmental Perspectives experience (for “E” tagged courses):

Human society is completely dependent on the Earth's ecological systems, but these systems are increasingly stressed by human activity. Knowledge of environmental issues enables students to recognize and respect the complex natural systems upon which contemporary society is built. This knowledge cultivates a sense of responsibility for addressing the short and long term consequences of human activity and provides the necessary framework for seeking solutions to ecological problems. Specifically, each student will be able to:

1. Recognize the interdependence of human society and the natural environment and the ways in which principles of ecological sustainability are essential to building a just and compassionate world.
2. Demonstrate how concepts of ecology are central to many areas of study.
3. Identify the ecological consequences of human activity on the Earth and envision fundamental solutions that work toward long-term sustainability.

More than thirty courses have been approved for the “E” tag.

In addition, an Environmental Studies Minor (<http://envirostudies.edgewood.edu/>) allows students to pursue a broad, interdisciplinary view of environmental issues. The Environmental Studies program offers a minor that complements any of the majors on campus.

b. Graduate Studies

The Sustainability Leadership Graduate Program (<http://www.edgewood.edu/academics/graduate/sustainability>) offers a graduate level certificate to students and fellows who apply course concepts to address real-world ecological and social issues in their organizations or communities.

c. Wood's Edge and 2015 Earth Week Activities

Wood's Edge is a student organization with goals to provide opportunities for social outdoor activities (e.g. camping, hiking, canoeing, and skiing) and to get involved in environmental issues at a local, state, national, or global level.

One of Wood's Edge major activities is helping to manage Edgewood's annual Earth Week activities associated with the Earth Day holiday. The 2015 Earth Week program included:

- TREK bike tune-ups
- Brain Czech of the Center for the Advancement of the Steady State Economy visited Campus to tour, provide a keynote address, and visit classes
- Table Fair in Wingra commons – bag drive, CSCT table, BIO 250 projects
- Invasive Species Pull
- Lakeshore path maintenance
- Green Tuesdays and Thursdays film festival
- Greens Food and Plant Sale

Other Wood's Edge activities included planting vegetable gardens to benefit onsite dining services and also local food pantries, various film festivals and outings to wetlands, rivers, and farms.

d. Staff & Faculty Education

- Participation in creation of Campus Sustainability Plan
- Staff and Faculty inclusion on Campus Sustainability Coordinating Team
- Distribution of CSCT monthly meeting minutes
- Participation in a Cool Choices competition to promote personal environmental consciousness in daily routines: <https://coolchoices.com/>

e. Neighborhood Involvement

- The Community Boardwalk along Lake Wingra is available to the public as well campus community. A community/family nature walk on the boardwalk was hosted by Wood's Edge students during Earth Week.
- The college partners with Friends of Lake Wingra and the Park and Pleasure Drive Association to manage and enhance the lakefront property.

Other activities in 2015 included:

- **Sustainability Leadership Program Event:** About 40 community members participated in the "Confluence Conversation" organized and managed by Sustainability Leadership Program students. The focus was on how business, nonprofits and government can work together on community well-being for social and environmental issues from a "collective impact" perspective with shared goals and measurements.
- **Sustainability Leadership Program:** The College served as a hub by hosting U-Lab learning sessions on 9/17, 10/8, 10/29, and 12/17. This sustainability program is based on Otto Scharmer and Katrin Kaufer's acclaimed book, [*"Leading from the Emerging Future: From Ego-System to Eco-System Economics"*](#) and offers hands-on processes and frameworks for creating community, organizational, and personal change [U-Lab 2.0](#) consists of four elements:
 - a. Live Sessions led by Otto Scharmer and web broadcast live from MIT
 - b. Reading/Homework available online for you to complete at your own pace
 - c. Coaching Circles - small groups of 4 to 8 people who meet between live sessions to practice the tools provided during the course. The Madison Hub will help facilitate the forming of coaching circles at the first live session.
 - d. Opportunities to connect and debrief with others in person at the Madison Hub
- **Invasive Species Removal:** Partnering with the Environmental Studies Program, neighbors worked together eliminating a resurgence of invasive, though pretty, purple loosestrife.

VI. DNR RELATIONSHIP

- **DNR Green Tier Roundtable:** Approximately 30 people representing Green Tier members, other businesses, nonprofits, and DNR attended in the DNR Green Tier

Roundtable meeting held at the College on Thursday, December 3. Participants shared best practices, experiences, and provided DNR with feedback about Green Tier.

VII. CONCLUDING COMMENTS

Edgewood College has strengthened our EMS in conjunction with our sustainability strategy to continue to produce superior environmental performance. As illustrated in this year's report, there were several innovative and exciting projects completed campus-wide. We look forward to our continued evolution as an environmental leader in higher education.

